



Indian Association of Cardiovascular-Thoracic Surgeons

Indian Association of Cardiovascular-Thoracic Surgeons presents,

HEART TO HEART

Making Every Heartbeat Count

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CORONARY ARTERY DISEASE – A LIFESTYLE MALADY GETTING TO KNOW CAD



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EXTENT OF THE PROBLEM

It's a matter of travesty that a country which harbours most number of malnourished and famished children in the world also has the dubious reputation of having the highest number of life-style disorders generally associated with plenty. India today accounts for highest percentage of heart patients worldwide, even though traditionally and culturally, it frowns upon smoking and embraces the idea of frugal vegetarianism. According to WHO, out of roughly 17.9 million deaths due to heart attacks worldwide, India alone accounts for nearly one-fifth ! More gory is

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the fact that nearly a half of all heart attacks occur under the age of 50 years, with 25% below the age of 40 years, with all the attendant ills and burden on the family and the society.

India's health and disease landscape is changing. The traditional burden of disease in the Indian subcontinent has been that of communicable diseases. However, in the past few decades, the focus has shifted to non-communicable or so-called "life-style" diseases, mainly Coronary Artery Disease (CAD) - in which arteries of heart get choked with cholesterol. This trend can be attributed to changing life-styles consequent upon economic growth, urbanization, more disposable incomes and a greater life expectancy. Over the last 60 years, the prevalence of CAD increased from 1% to a whopping 9-10% in urban Indians, and from <1% to a sizable 4-6% in rural populations. With epidemiological transition consequent upon rapid urbanization, the urban-rural divide is getting blurred. The disease has even cut across the gender bias to affect women as commonly as men folk beyond the age of menopause.

WHAT CAUSES HEART ATTACKS, DIABETES & HIGH BLOOD PRESSURE (BP) ?

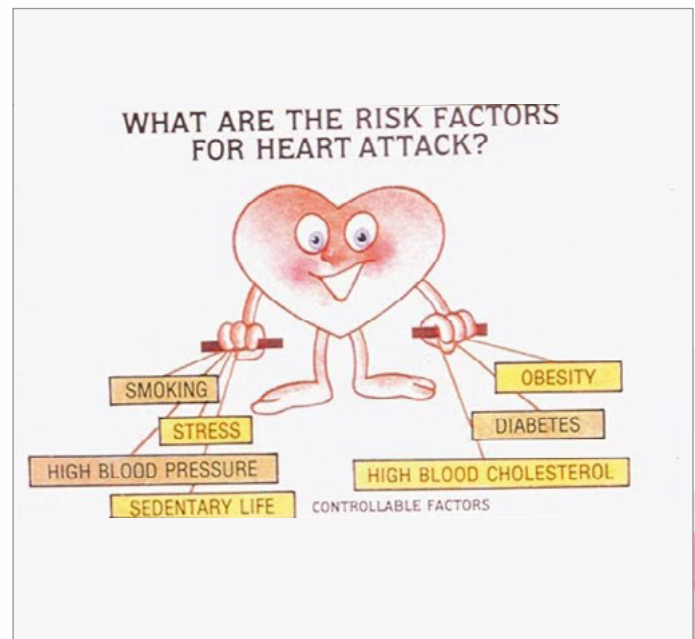
काल बुद्धिन्द्रियार्थनं योग मिथ्या न चति च

The causes for these disorders were recognized way back, even in the 'Common era'. Charak-Samhita captured it all and vividly expounded; *काल बुद्धिन्द्रियार्थनं योग मिथ्या न चति च* which translated means, 'All diseases of mind and body are caused by either wrong or non-utilization of time, mental faculties and objects of sense organs'. This holds true even today, in fact, even more so. Besides, all of us in South-East Asia are genetically prone to high BP, Diabetes and blood Lipid (Cholesterol) abnormalities. This is called 'Metabolic Syndrome' and can lead to blockage of arteries, especially of heart (causing heart attacks), brain (causing strokes – paralysis/coma) and kidneys (kidney failure). The unhealthy life-style that we adopt thus creates a nurture on which predetermined Indian genes for heart attack and other life-style disorders get a chance to play upon. Multiple risk factors just don't add up, but have an effect in geometric proportions. Thus, if we have 3 risk factors like pot belly, BP and diabetes, the risk of heart attacks just does not add up to 3 but multiples (3X3) and risk becomes 9 folds higher.

Consequent to the economic transition and a burgeoning nouveau-rich middle-class, India is undergoing a rapid dietary transition too . The consumption of empty calories in forms of sugar laced juices and aerated cola drinks, as well as highly refined carbohydrate meals, has gone up. These include maida based fast foods like pizza and burger, Chappati and Naan made of refined flour , bread, white rice, biscuits, confectionary & bakery products, savories and snacking tit-bits like chips etc. Food and Agriculture Organization, in a study, showed that between 1961 and 1999 there was an increase in energy consumption of 450 K calorie /day/capita globally, but in India it was more than 600 K calorie/day/capita! This was due to an increase in consumption of starchy vegetables by 111% and that of refined sugars by 206%, and decrease in consumption of heart healthy millets, sorghum and pulses by 31-45%. Even consumption of fatty and fried food has gone up. Unfortunately, the commercial manufacturers and hotel industry use saturated oils as the cooking medium, because the foods cooked in them have a longer shelf life and they give the food the desired shape and texture, as also because they are cheaper. However, on repeated use, these oils produce trans-fatty acids, which are the worst form of fat for causing heart diseases. Trans-fatty acids promote inflammation in the body and increase certain harmful reactors like CRP (C Reactive Protein) which lead to deposition of cholesterol (Atherosclerosis) and blockage of the arteries of the heart, brain, kidneys etc. All food items prepared by using 'Vanaspati' or margarine like cakes, pastries, patties, aloo tikki, fried potato chaat, sweets, biscuits, cookies, french fries, potato chips, bhaturas, samosas, pakoras, paranthas, crispies, fried nuts and other savories contain trans-fats.

Beware, if you:

- Have high blood pressure or diabetes
- Have high blood cholesterol
- Consume tobacco – smoke, eat, snuff
- Weigh too much or have a pot belly
- Exercise less than 3 times a week
- Consume simple carbohydrates (Empty calories)
- Eat high fat, high cholesterol food each day
- Have family members who have had a stroke or heart attack
- Are a man over 45 years of age
- Are a woman in the post menopausal age
- Are often tense, stressed or pressed for time



To make matters worse, pari-passu with unhealthy diet, there has been reduction in physical activity levels due to technology driven automation, video and computer games and ubiquitous availability of that naughty box called television. Breakdown of joint family support systems, with emergence of nuclear families, and pressures of upwardly mobile corporate world have brought mental health into focus. Anxiety, anger, fear, frustration, non-tolerance and depression have become ubiquitous. All these contribute in a big way in causation of life-style diseases.

KNOW YOUR RISK FACTORS FOR ATHEROSCLEROSIS (FAT AND CHOLESTEROL DEPOSITS IN ARTERIES)

1. High Blood Cholesterol:

If you do not know your cholesterol levels, you should.

The higher your intake of simple carbohydrates and fats, particularly animal and full cream dairy fat, the higher your blood cholesterol level will be. This in turn leads to build up of fatty deposits on the walls of your arteries.

Fats are essentially of 3 kinds:

- Saturated
- Polyunsaturated (PUFA)
- Monounsaturated (MUFA)

The saturated fats are the worst for you, but all fats should be counted in your food. Foods high in simple carbohydrates, saturated fats and cholesterol have been linked to heart disease. Most often these are processed foods, animal meat and full cream dairy products. Saturated fats can also be found in vegetable oils such as coconut and palm oils; but generally, plant foods (such as beans, grains, vegetables and fruits) have less fat and cholesterol than animal food. A thumb rule – anything that solidifies at room temperature is likely to be a saturated fat and injurious to your health. Your aim should be to keep the total cholesterol as low as possible and certainly below 200mg% and to consume no more than 20%-30% of your total calories as fats.

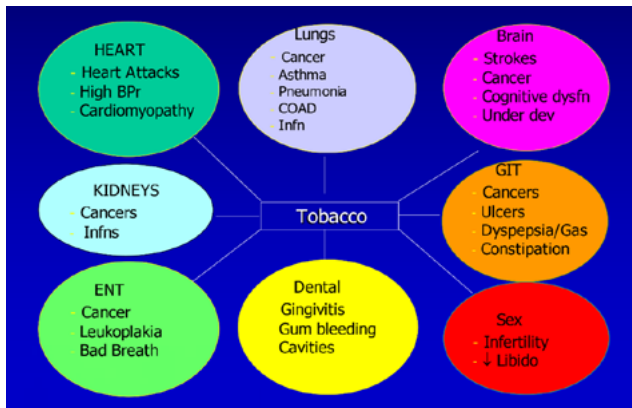
Increase your intake of	Reduce your intake of
<p>All types of fresh fruits</p> <p>All types of vegetables especially root vegetables, leafy green vegetables, brightly coloured vegetables (carrots, tomato etc.)</p> <p>Coarse grains like millets - ragi, jowar, bajra, jhangora etc.</p>	<p>Red Meat – Mutton, pork, beef etc.</p> <p>Full cream dairy products</p> <p>Bakery and Confectionaries</p> <p>Refined flour/Wheat – White bread; buns, pizzas, samosas etc.</p> <p>Processed food, much of which contain high levels of salt and sugar e.g. sausages, bacon, tinned food etc.</p> <p>Foods containing “hidden fat” such as biscuits, cakes, pastries, pies etc.</p> <p>Salt</p> <p>Aerated drinks & packaged juices</p> <p>High Fat, Salt & Sugar (HFSS) foods like Ketchup, Pickles, Pappad etc.</p>

2. Tobacco: If you smoke (inhale), eat or snuff – Stop !!!

Tobacco adversely affects all organs of the body. It is the most important preventable cause of premature death. One in ten deaths world-over are related to smoking. It has been shown that even second-hand smoke or passive smoking may increase the risk of heart disease. The risk of a heart attack for a smoker is more than twice that of a non-smoker in both men & women. The good news, however, is that the risk of a heart attack decreases with smoking cessation. In one study of people who had a heart attack, the risk of second heart attack fell by half with in one year of stopping tobacco intake, and became the same as for non-smokers within 2 years of smoking cessation.

Tobacco in any form constricts your arteries, makes your blood thick and sticky and more likely to form a clot, besides costing a small fortune. There is no difference between Beedi, Cigarette, Cigar or Hookah. Also, non-smoked tobacco like Gutka or Paan Masala is as harmful, as smoked tobacco.

So quit tobacco for a healthy heart. It may take more than one try to quit, but don't give up. Each try improves your chances of quitting for good.



Tobacco/Smoke (Yours or someone else's):

- Narrows blood vessels
- Can cause coronary artery spasm
- Scars the lung and reduces oxygen exchange
- Increases heart rate
- Shortens life span
- Lowers good cholesterol

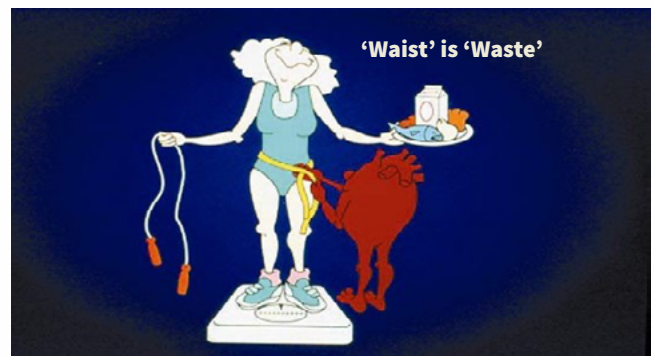
3. Obesity: Modern day epidemic

Obesity is linked with CAD because it has an effect on BP, diabetes and blood cholesterol. Though absolute weight is important, equally important is where is this extra weight gain coming from. Fat deposition around tummy (visceral obesity – pot belly) is most damaging & associated with CAD. It is also called ‘Apple Obesity’, as against ‘Pear Obesity’ where fat is deposited below the waist, i.e. around hips and thigh. ‘Waist’ is ‘Waste’ – keep waist circumference <90cm in men and <80cm in women.



Overweight – An overworked heart:

- More cholesterol in the blood
- Higher blood pressure
- More diabetes
- More work load on the heart
- Shortness of breath



4. High Blood Pressure

High BP causes damage to the lining of the arteries and accelerates the build-up of fatty deposits (plaques) in the arteries. Also it causes extra stress on the heart by forcing it to work harder to pump blood. Over time, much damage is done causing strokes, heart attacks or kidney failure. High BP is sneaky. You can have it and not know, because high BP usually does not cause symptoms and that is why it's called the “Silent Killer”. Have your BP checked regularly and if it is high, follow your doctor's advice for bringing it down to normal and continue taking medicines even if BP is normal.

Taking regular exercise, losing weight, adopting a healthy low salt diet, abstinence from tobacco, yoga and management of stress can all help control BP.

5. Diabetes Mellitus

Diabetes puts a person at very high risk for build-up of fat and cholesterol in the arteries, of not only heart, but of virtually every organ of the body. It may lead to stroke (paralysis), kidney failure, blindness, leg amputation and many other such serious and life-threatening complications, besides heart attacks. Having diabetes increases the risk of heart disease two times in men and three times in women. One must check the average 3-monthly sugar levels by measuring HbA1C and try to keep it below 7%.

6. Physical inactivity

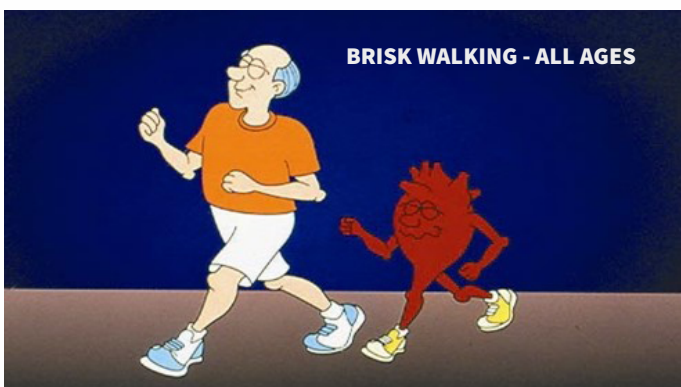
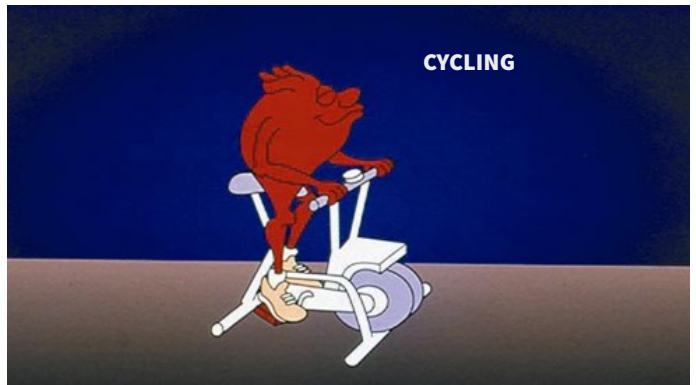


Being physically inactive is a major risk factor for CAD. It may also contribute to development of obesity, diabetes, high BP and low level of HDL (good) cholesterol. You can keep your heart healthy with a 30-60 minutes brisk walk (6-8 Km/hr) daily. In fact, regular brisk walking is a panacea for all ills and is strongly recommended for all groups - be it babies, young, elderly and even for pregnant women.

There are 3 types of exercise:

- Aerobics (for blood flow and oxygen)
- Strengthening (for toning and building muscles)
- Stretching (for staying flexible)

The most important exercise for your heart is aerobic exercise, with a touch of strengthening exercises. Walking, jogging, swimming, dancing, cycling and playing sports like tennis and badminton etc. are all aerobic.

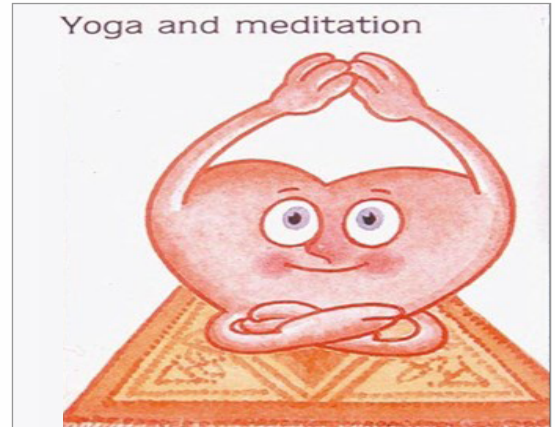


7. Stress

Mental health is a vital area which we ignore at our peril, for not only does it have an impact on physical self, it may affect our entire sense of wellbeing - our happiness. Very often a stress sufferer does not realize that he has a problem. Therefore, in some ways stress and depression are the most difficult problems to solve. Even if you can't get rid of stress, you can learn how to be less angry, less hostile and less uptight. Even a 10-minute break, or a short session of yoga, during work gives your heart and BP relief and reduces stress.

Use one of these to slow down:

- Breathing deeply and slowly to get relaxed
- A 10 to 20 minutes rest/power nap
- A 30-40 minutes brisk walk
- Yoga, meditation
- Massage
- Music



8. Alcohol

Recent evidence is emerging that even small amounts of alcohol can be damaging, especially to liver and heart. Therefore, it is never encouraged as a health promoting ambrosia, but those who can regulate themselves and are used to it, they may continue taking it, sans any guilt, albeit within limits. Permissible limits are 1 or 2 drinks of 30ml of proof 42% alcohol, or 150 ml wine, or 375 ml of beer per day.

WHAT NEEDS TO BE DONE ?

Good News !



Fortunately, before most major risk factors manifest clinically, there is a period of almost five years in which if necessary remedial actions are taken, disease can be reversed. Therefore, before full blown BP develops, that is $>130/80$ mmHg (some recommend a cut-off value of $120/80$ mmHg), there is a period of pre-hypertension of five years in which the BP ranges between 120-139 mm of Hg upper (systolic) and 80-89 lower (diastolic) and similarly for diabetes also, there is a period of 5-7 years, when alteration of life-style can revert and prevent development of a full-blown disease.

What needs thus be done ? The "magic cure" already exists, it's all around us and it is totally free of charge - 'Healthy Life-Style'. The simple truth is that the human body has an amazing ability to sustain vitality and good health, provided it is treated with respect. The life-style changes required are not difficult to achieve and even relatively trivial "Dos & Don'ts" and a small decrease in each risk factor adds up

to produce monumental benefits for an individual, as well as the society. One needs to make sensible life-style changes of taking prudent diet, regular exercises and keep the body weight under control. Hippocrates once said, "If you could give every individual the right amount of nourishment, we would have the safest way to health". But unfortunately, a glutton digs his grave with his teeth. We are munching all the time and not paying any heed to the French proverb, 'A good meal ought to begin with hunger'. We need to have a self-control over the tendency of eating between-the-meals snacks and munching subconsciously while watching TV (binge eating). One must also not assault ones heart by excessive salt intake. At the same time, we should take plenty of fresh green leafy vegetables, high in dietary fiber, and less of fried & fatty foods and simple carbohydrates. More often, it is not the food but cooking which brings about the harm. Thus eat food fresh as much as possible. Deep frying and repeated use of same oil is extremely harmful. Try and sauté or steam cook food. Avoid using oils with low boiling point like



virgin Olive oil for frying. They are best used in salads. Mustard oil is better for deep frying. One level teaspoon of desi ghee may be used daily, but at temperature <100oC.

Needless to say, tobacco is a big 'No' in any form. Even passive or second-hand smoke should be avoided by not allowing anyone to smoke in your house and not standing within 10 feet of a person who is smoking. Along with this one must take regular brisk (6-8 Km/hour) walks for at least 30-40 minutes per day.

Stress release too is extremely important and can never be over-emphasized. Minor life-style engineering in terms of small periods of mid-day naps, meditation and yoga may go a long way in relieving these disorders.

'WOMB' TO 'TOMB'

These life-style changes should be brought about right from the beginning, that is, even when the child is in the womb of the mother! Autopsy studies of young American soldiers, who were victims of the Vietnam war, as well as of infants dying of unrelated disorders, showed fatty streaks and cholesterol deposition in the arteries of the heart at ages as young as one year. Children therefore need to be protected from heart unhealthy foods to which they are lured by provocative and attractive marketing and advertisements of tobacco companies, soft drink makers and fast-food vendors. Specially in school and college canteens, fried and empty calorie foods and drinks should be banned totally by legislation. There should be a parental bar on screen time with TV, computers & mobile phones. Outside activities & contact sports should be encouraged.

It's time ripe that we wake up to the stark reality of being in the midst of an epidemic of life-style related disorders and take remedial actions before the proverbial last nail in the coffin is drawn. Procrastination or delaying things till tomorrow will only complicate matters & who knows, there may be no tomorrow. Let each one of us take control of our own health, rather than depend on the government or other agencies and not consider money spent on health as expenditure but as an investment, for after all the adage goes:

"Health is Wealth".

Next issue: Should you get afflicted with CAD, what options do you have.

Indian Association of Cardiovascular-Thoracic Surgeons

Reboot The Heart

Join us, Cardiovascular & Thoracic Surgeons to be a Heartthrob

AN IACS OUTREACH INITIATIVE

- 1 Call for help
- 2 Check pulse
- 3 Check for breathing
- 4 Give rescue breaths 2x
- 5 Give chest compression 30x
- 6 Repeat until the emergency services take over

WORLD HEART DAY 29th Sep, 2023
USE HEART KNOW



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